

Patent claims

1. A motor vehicle safety device for protecting pedestrians and cyclists, having at least one
5 airbag which is arranged under the engine hood, is connected to at least one gas generator, unfolds to protect a pedestrian or cyclist who strikes the vehicle and, in the process, initially lifts up the engine hood from the
10 motor vehicle, at least at the location of the unfolding of the airbag, to such an extent that the airbag can unfold outwardly in a second phase, characterized in that, in the unfolded state, the airbag (1) has in each case one
15 chamber (15, 16) below the engine hood (19) in the region of the hinges (19a, 19b) of the engine hood (19), in that the airbag (1) extends above the engine hood (19) over the entire width of the motor vehicle in front of the lower
20 region of the windshield and the A pillars (17, 18) of the motor vehicle, and in that the lateral ends (2, 3) of the airbag which, in particular, cover the A pillars (17, 18) point upward after the unfolding of said airbag, and
25 in that the airbag sections which are unfolded in front of the A pillars of the motor vehicle are additionally fixed in order to prevent the lateral displacement of said airbag sections.
- 30 2. The safety device as claimed in claim 1, characterized in that at least one intercepting strap (21, 22, 23, 25, 26, 31, 32) is provided as a means for fixing the lateral ends (2, 3) of the airbag.

3. The safety device as claimed in claim 1 or 2, characterized in that at least one tube-shaped airbag (21a, 22a, 23a, 25a, 26a, 31a, 32a) is provided as a means for fixing the lateral ends
5 (2, 3) of the airbag.
4. The safety device as claimed in claim 2 or 3, characterized in that the lateral ends (2, 3) of the airbag are connected to one another by an
10 intercepting strap (21) or a tube-like airbag (21a).
5. The safety device as claimed in at least one of claims 2 to 4, characterized in that the lateral
15 ends (2, 3) of the airbag are connected to the lower region of the airbag section which lies on the opposite vehicle side via intercepting straps (22, 23) which extend crosswise or via tube-like airbags (22a, 23a).
- 20 6. The safety device as claimed in at least one of claims 2 to 5, characterized in that the lateral ends (2, 3) of the airbag are fixed by intercepting straps (25, 26) or tube-like
25 airbags (25a, 26a, 26b), the other ends of which are fastened to the motor vehicle.
7. The safety device as claimed in claim 6, characterized in that the intercepting straps
30 (25, 26) or tube-like airbags (25a, 26a) are connected to the central section of a module housing (20) which is arranged below the engine hood (19).

8. The safety device as claimed in at least one of claims 2 to 7, characterized in that each lateral end (2, 3) of the airbag is fixed by two intercepting straps (25, 31 and 26, 32, respectively) or two tube-like airbags (25a, 31a and 26a, 32a, respectively) which emerge from the outer side (29, 30) and the inner side (27, 28) of the respective lateral end (2, 3).
9. The safety device as claimed in at least one of the preceding claims, characterized in that reinforcements (24, 33) of the airbag are provided in the region of the lateral ends (2, 3).
10. The safety device as claimed in claim 9, characterized in that at least one seam (33) is provided as reinforcement.
11. The safety device as claimed in claim 9 or 10, characterized in that at least one transparent airbag (24) is provided as reinforcement.
12. The safety device as claimed in claim 11, characterized in that at least one transparent airbag (24) is arranged between the lateral ends (2, 3).

13. The safety device as claimed in claim 11, characterized in that at least one transparent woven fabric insert (34, 35) extends from each lateral end (2, 3) into the central region of the airbag.
14. The safety device as claimed in at least one of the preceding claims, characterized in that a guide system (36 - 39) for guiding the lateral ends of the airbag during its unfolding, which guide system (36 - 39) is connected to said airbag, is provided in the region of the A pillars (17, 18).
15. The safety device as claimed in claim 14, characterized in that the guide system has a guide rail (36, 37) on each A pillar (17, 18), on which guide rail (36, 37) a guide part (38, 39) which is connected to the airbag can be displaced during the unfolding of the airbag.
16. The safety device as claimed in at least one of the preceding claims, characterized in that the chambers (15, 16) which lie below the engine hood (19) in the unfolded state are connected to a gas generator directly or indirectly via feed lines.
17. The safety device as claimed in at least one of the preceding claims, characterized in that the airbag has at least one outflow opening for energy absorption by means of said airbag.

18. The safety device as claimed in at least one of claims 1 to 16, characterized in that the airbag is subdivided into chambers (1c, 2, 15, 16) by tucks and/or dividing walls (4a, 4b, 6, 9, 10).

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19. The safety device as claimed in claim 18, characterized in that, for energy absorption by means of the airbag, the chambers are connected to one another in such a way that a volume can be displaced between them.

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